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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/697,890	10/27/2000	Andrew C. Gallagher	81659DMW	6354

7590 06/08/2004

Patent Legal Staff
Eastman Kodak Company
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EXAMINER	
COUSO, YON JUNG	
ART UNIT	**PAPER NUMBER**
2625	

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/697,890	GALLAGHER, ANDREW C.	
	Examiner	Art Unit	
	Yon Couso	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *3,4,8 and 9* is/are allowed.

6)☒ Claim(s) *1,2,5-7,10-12 and 15-20* is/are rejected.

7)☒ Claim(s) *13 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Applicant's arguments filed s March 11, 2004 have been fully considered but they are not persuasive.

a. The applicant argues that the use of interpolation is different between the speech and digital image. The examiner agrees. It has been even pointed out in the body of the rejection. However, there are similarities. Whether (1) to detect sound portion of speech signal by detecting sound portions of speech signals in each input trunk and by combining only the detected sound portion to form new digital signals so that the new digital signal has a smaller number of output channels than the number of input trunks or (2) to reduce the size of image by skipping certain number of image pixels so that the new digital image signal has a smaller number of output pixels than the input image, they both change sequence/location of the digital signal to reduce the number of digital signal. It is clear that the specific interpolation technique developed for one signal (speech or image) cannot be applicable to the other without modification. However, the use of interpolation in both signals, speech and image (image reduction), has the same goal, which is to reduce the number of digital signal by changing sequence/location of the digital signal. Moreover, both digital speech and digital image processing are based on the fundamentals of signal processing. The claim calls for merely determine whether the digital signal is an interpolated signal channel or a non-interpolated signal channel. Given the Schmidt reference, which discloses means for using the extracted digital signal to determine whether the digital signal is an interpolated signal channel or a non-interpolated signal channel (column 10, lines 55-64), it would have been obvious to one of ordinary skill in the art to adapt the technique

taught in Schmidt's teaching into the digital image processing for they share many signal processing technique such as interpolation.

b. The applicant argues that the Schmidt does not teach factor of interpolation. The examiner notes that estimated factor of interpolation can be calculated by calculating ratio of the sampling rate of the output image to the sampling rate of the input image or calculating ratio of the size of the digital output signal to the size of the digital input signal.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 5, 6, 7, 10, 11, 12, 16, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt (US 5,754,536).

The arguments advanced in paragraph 1 above are incorporated herein.

As per claims 1, 6 and 16, Schmidt teaches a digital signal processing system for determining the interpolation attributes of a digital signal channel, the system comprising: means for extracting a digital signal from the channel (column 6, lines 39-54); and means for using the extracted digital signal to determine whether the digital signal is an interpolated signal channel or a non-interpolated signal channel (column 10, lines 55-64).

The Schmidt reference is mainly directed to digital speech processing method and apparatus. Even though, there are differences between processing image signal

data and speech signal data, there are also similarities. Main difference is that, the speech signal is made of one dimensional data stream, whereas, image data is mainly represented as two dimensional. However, two dimensional image data can also be processed in one dimensional data stream. Interpolation is widely used in both speech and image processing that the technique of checking whether the data stream is interpolated or not can be used, in not only in speech processing but also in image data processing. Schmidt discloses means for using the extracted digital signal to determine whether the digital signal is an interpolated signal channel or a non-interpolated signal channel (column 10, lines 55-64). It would have been obvious to one of ordinary skill in the art to adapt the technique taught in Schmidt's teaching into the digital image processing for they share many signal processing technique such as interpolation.

As per claims 2, 7, 17 and 20, determining an estimated factor of interpolation is a mere reverse interpolation. Given the Schmidt reference, which determines whether the digital signal is an interpolated signal channel or a non-interpolated signal channel, at the time the invention was made, it would have been inherent, if not obvious to one of ordinary skill in the art to determine an estimated factor that resulted in the interpolated signal.

As per claims 5 and 10, same arguments with regard to claims 2 and 7 apply because the estimated factor would provide information as to which method of interpolation was used to form the digital image channel.

As per claim 11, Schmidt teaches determining whether the digital image channel is an interpolated digital image channel or a non-interpolated digital image channel

(column 10, lines 55-64). Schmidt does not teach details on sending a message to a user based on this finding. Schmidt clearly performs different functions based on this finding. Mere incorporation of sending a message to a user at this point is not deemed patentably significant and lacks any criticality.

As per claim 12, Schmidt teaches means for determining a subsequent image processing channel based on whether the digital image channel is an interpolated digital image channel or a non-interpolated digital image channel (column 10, lines 55-64).

3. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt as applied to claim 16 above, and further in view of Martin (US Patent No. 6,549,233).

As per claims 18 and 19, Schmidt does not teach digital image signal having three channels; red, green, and blue. However, it is old and well-known in the art that the color image interpolation would require three or four channels as evidenced by Martin (column 2, lines 52-57). Given the Schmidt reference, which discloses means for using the extracted digital signal to determine whether the digital signal is an interpolated signal channel or a non-interpolated signal channel (column 10, lines 55-64) and Martin reference, which teaches color image interpolation (column 2, lines 52-57), it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to adapt the technique taught in Schmidt's teaching into the digital color image processing having red, green, and blue channels in Martin's teaching for interpolation technique is applicable to both digital speech and digital image processing and shares the same fundamental from the signal processing.

4. Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 3, 4, 8, and 9 are allowed.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yon Couso whose telephone number is (703) 305-4779. The examiner can normally be reached on 8:30 am –5:00 pm from Monday to Friday

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

YON J. COUSO
PRIMARY EXAMINER

Yjc

June 1, 2004